Draft
Motor Vehicle-related Injuries

6/26/06

Definition: All unintentional motor vehicle-related deaths, including those involving drivers, passengers, pedestrians, motorcyclists, and bicyclists. Motor vehicle hospitalizations for years 1980 through 2004 and deaths for years 1980 through 1998 include all records with an ICD 9 code including E810-E825. Deaths for 1999-2004 include those with an ICD 10 code of V02-V04, V09.0, V09.2, V12-V14, V19.0-19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-87.8, V88.0-V88.8, V89.0 or V89.2

Washington State Goal Statements by 2010:

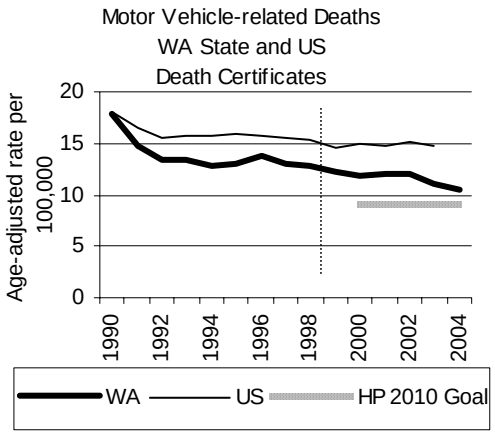
1. Reduce motor vehicle traffic deaths by 7% from 10.5 per 100,000 in 2004 (647 deaths) to 9.8 per 100,000.
2. Increase use of safety belts from 95 to 97%.
3. Increase the use of child safety seat and booster seat use from 70% and 50%, respectively to 85%.

National Healthy People 2010 Objectives:

1. Reduce motor vehicle death rate from 15.6 to no more than 9.2 per 100,000 and reduce from 1.6 to no more than 0.8 deaths per 100 million vehicle miles traveled. *In Washington in 2005, motor vehicle traffic death rate was 1.13 deaths per 100 million vehicle miles traveled.*
2. Reduce pedestrian deaths on public roads from 1.9 pedestrian deaths to no more than 1.0 death per 100,000. *In Washington in 2005, the pedestrian death rate on public roads was 0.99 deaths per 100,000.*
3. Reduce nonfatal injuries caused by motor vehicle crashes to no more than 933 nonfatal injuries per 100,000. *There are no comparable data for Washington.*
4. Reduce nonfatal pedestrian injuries on public roads from 26 to no more than 19 nonfatal injuries per 100,000. *There are no comparable data for Washington.*
5. Increase use of safety belts from 69% to 92%.
6. Increase use of child restraints from 92% (among children under 4) to 100%.
7. Increase the proportion of motorcyclists using helmets from 67% to 79%. *In Washington in 2004, 99.7% of motorcyclists were wearing helmets.*

Statement of the Problem:

Motor vehicle traffic is the second leading cause of injury death and the leading cause of major trauma in Washington State. In 2003, motor vehicle traffic crashes were the leading cause of death among Americans for the age group 4 through 44, and the first or second leading cause (depending on the age group) among Washingtonians ages 1 through 44, killing more people than disease or other injuries. An average of 500 vehicle occupants is killed in Washington each year.

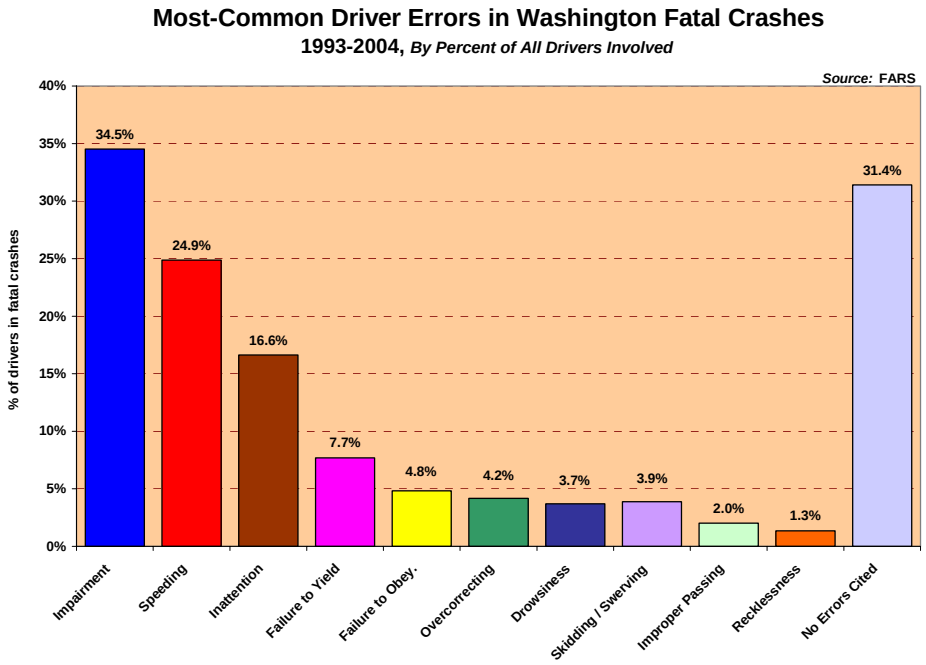


From 1993-2003, data from the Washington State Fatal Accident Reporting System (FARS) shows that nearly 80 percent of people who die in traffic collisions are vehicle occupants, 12 percent are pedestrians, 7 percent are motorcyclists, and less than 2 percent are bicyclists. Males account for 68 percent of traffic deaths, while females account for 32 percent.

Motor vehicle crashes are the leading cause of death for American teenagers. Washington State FARS data from 1993-2003 indicates that 15-20 year-olds suffer the highest number of fatalities at 1,181 over the past 10 years, followed by 21-25 year-olds at 908 deaths. Newly licensed drivers with less than one year of driving experience have the highest crash rate of any driver group. Nearly half of the sixteen-year-old fatal crashes were single vehicle crashes. Nationally, two out of three teen passenger deaths occur when another teen is driving.

Sixty-one percent of traffic fatalities occur on rural roads, while 39 percent occur on urban roads. By road type, 38 percent of deaths occur on state or United States (US) highways, 31 percent on county roads, 18 percent on city streets, and 11 percent on interstates. If the rate of death per 100 million vehicle miles traveled (VMT) is considered, then county roads suffer the highest fatality rate at 2.28 per 100 million VMT, while state and US highways have a rate of 1.65, city streets are at .90, and the interstate is .53 per 100 VMT.

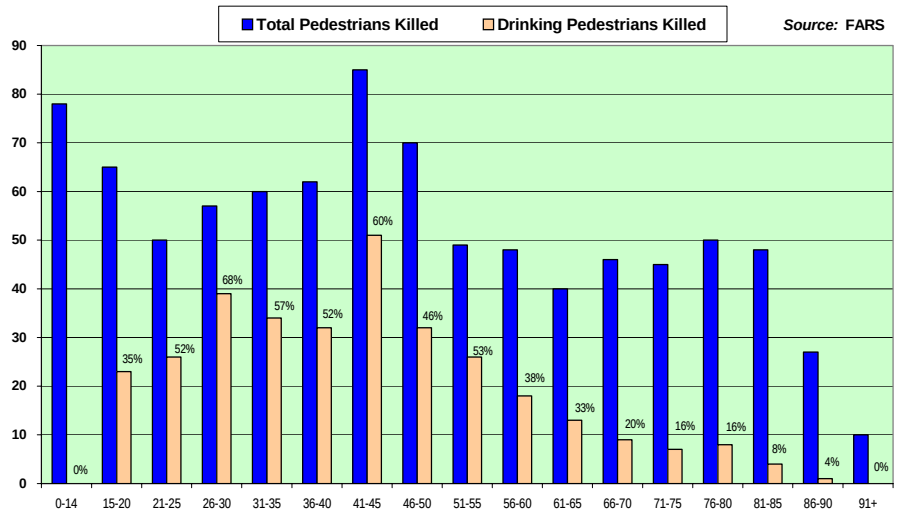
The top two reasons cited in fatal crashes in Washington are: impairment and speeding. From 1993-2004, impairment accounts for 35 percent and speeding accounts for 25 percent of all fatal crashes. In the past ten years, the most common drinking driver fatality involves a 21-25 year old (31 percent) male (77 percent) vehicle occupant (89 percent) driving on rural roads (64 percent). Although final data is not yet available, according to the Washington Traffic Safety Commission (WTSC), the number of Washingtonians that died in a crash involving a driver who had been drinking appears to have increased since 2004. Reductions in impaired driving and speed would also create a reduction in pedestrian, bicyclist, and motorcyclist-related injuries and fatalities.



Pedestrians

Even though the number of pedestrians killed in Washington State has declined in the past few years, it is still a safety concern. Sixty pedestrians were killed in 2004 in Washington State, down from 75 in 2003 and a high of 92 in 1996. According to WTSC data from 1993 to 2003 as shown below, between the ages of 21 to 55, more than 50 percent of those pedestrians killed had been drinking.

WASHINGTON PEDESTRIAN FATALITIES, 1993-2004
By Age Group and Alcohol Status



Nationally, 4,641 pedestrians were killed in traffic crashes in 2004. More than two-thirds (69 percent) of the pedestrians killed were males, 8 percent were children under the age of 15, and 15 percent were older pedestrians over the age of 69. Alcohol played a role—either for the driver or for the pedestrian—in nearly one-half (47 percent) of the traffic crashes that resulted in all pedestrian fatalities in the US. Pedestrians with a Blood Alcohol Content (BAC) at .08 or higher account for 34 percent of all pedestrian fatalities, drivers with a BAC at .08 or higher account for 13 percent of all pedestrian fatalities; and both driver and pedestrian with a BAC at .08 or higher account for 6 percent of the fatalities.

Bicyclists

Research has shown that head injury is the most common cause of death and serious disability in bicycle crashes, and that correctly wearing a bicycle helmet reduces the risk of a head injury by nearly 85 percent. Bicycle injuries are the second leading cause of injury hospitalization for Washington children 5-14 years old. Bicycle hospitalization rates were highest in the 10-14 age group. Bicycle-related hospitalizations are more common among males than females. The majority of bicycle deaths in Washington occurred to children who were not wearing a bicycle helmet.

Research has also shown that for every $1 spent on bicycle helmets, $30 is saved in direct medical costs. Data from the 2002 Washington Healthy Youth Survey show that almost half of sixth graders report wearing a bicycle helmet most of the time or always while riding a bicycle. However, by grade 12 only about 13 percent of students report wearing a bicycle helmet always or most of the time while riding a bicycle.

Recommended Strategies from the Injury Community Planning Group:

1. Reduce impaired driving and speeding.

- *Encourage the enactment of state laws that will enhance enforcement, prosecution, and adjudication of impaired driving laws.*

  In reducing impaired driving, two groups of great concern are hard-core, repeat offenders and young drinking drivers in the high-risk 21 – 34 year age group. In 1994 and 1995, new underage impaired driving laws were adopted, with penalties for drivers younger than 21 with a BAC of .02 or higher. In 1998, Washington enacted important changes to the Driving Under the Influence (DUI) Law including a lower BAC limit of .08 for all drivers, administrative license suspensions, vehicle impoundment, and more jail time for convicted DUI offenders. In 2004, House Bill 3055 was passed by the Washington State Legislature and became law. This new law changed the standards for admitting breath-alcohol test results, the standards for obtaining blood draws, and the advisement of rights concerning breath tests.

- *Use of automated traffic enforcement (photo radar) and sobriety checkpoints.*

  It should be noted that use of automated traffic enforcement and sobriety checkpoints are national best practices that have been extremely effective in reducing impaired driving and speeding. However, these practices are not currently permissible under Washington State law.

2. Increase the use of seat belts and child passenger restraints.

Research shows that a person wearing a seat belt has a 70% better chance of surviving a collision than someone who is not buckled up. As a result of the "Click It Or Ticket" project in 2005, the seat belt use rate in Washington rose to a new high of 95.2% - the second highest rate in the US.

The seat belt law in Washington State will change on June 1, 2007, to update to the current national best practice. Washington's Child Restraint Law will require that:

- Children not yet 13 years old be transported in the back seat where it is practical to do so.
- Children up to their 8th birthday, unless already 4'9" tall (57 inches) be transported in a child restraint system. (For example a child car seat, booster seat, vest or other restraint that is federally approved for use in the car).
- The restraint system be used according to the car seat and vehicle manufacturer's instructions.
- Vehicles equipped with lap-only seat belts be exempt from the requirement to use a booster seat.

- Children 8 years of age or at least 4'9" tall who wear a lap/shoulder seat belt wear it correctly (not under the arm or behind the back).

A. Increase the use of seat belts:

- Continue statewide high-visibility enforcement and media campaigns to maximize restraint use.

- Provide enhanced public education to population groups with lower than average restraint use rates.

- Encourage the enactment of state laws that will enhance enforcement of occupant protection laws.

B. Increase the use of child passenger restraints:

- Conduct high profile child restraint inspection events at multiple community locations.

- Provide community locations to instruct people in proper child restraint use.

- Train law enforcement personnel to check for proper child restraint use in all motorist encounters.

3. Increase motorcycle helmet use.

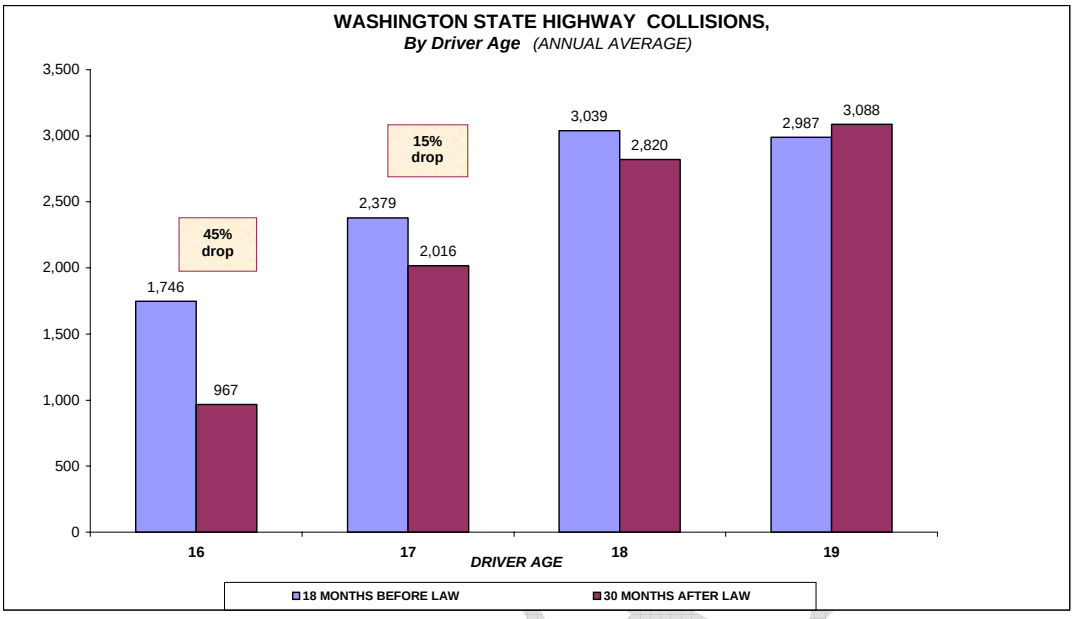
4. Develop programs for populations of drivers who are over-represented in fatal crashes.

A. Teen drivers: Intermediate Driver's License Law.

On July 1, 2001, Washington State's new Intermediate Driver's License Law took effect. An Intermediate Driver License, sometimes referred to as a teen or graduated license, is issued to a driver under the age of eighteen. The purpose of the Intermediate Driver License is to improve highway safety by progressively developing and improving the skills of younger drivers in the safest possible environment, thereby reducing the number of vehicle crashes.

Since the new law took effect, Washington has experienced a 45 percent drop in the number of collisions involving 16-year-old drivers and a 15 percent drop in collisions involving 17-year-olds. Additional strategies to encourage compliance with the State's Intermediate Driver's License Law need to be developed especially to educate teen drivers and their parents about intermediate license restrictions and penalties and to educate law enforcement officers about intermediate license laws.

Drivers 16-19 years old Involved in Washington Highway Collisions
Preliminary Before / After Study
January 1, 2000 to June 30, 2001 ("Before" Period) Numbers represent ANNUAL AVERAGE
July 1, 2001 to December 31, 2003 ("After" Period) Numbers represent ANNUAL AVERAGE



B. Aggressive drivers: Washington State Patrol Aggressive Driving Program.

The Washington State Patrol started its aggressive driving program on Memorial Day weekend, 1998. A squad was selected to work the aggressive drivers and two unmarked cars and motorcycles were assigned to target flagrant violators. Officers in the unmarked cars spot the aggressive drivers and the motorcycle officers make the stops and take the appropriate enforcement action. The squad is supervised by a motor sergeant with the troopers being rotated on a 3-month interval. The initial squad is focusing primarily on the freeway system around Seattle.

5. Reduce collisions involving distracted or drowsy drivers.

In Washington State between 1993 and 2004, 17 percent of drivers involved in fatal crashes were cited for inattention and 4 percent for drowsiness. According to a new study by the National Highway Traffic Safety Administration (NHTSA) and the Virginia Tech Transportation Institute (VTTI), nearly 80 percent of crashes involved some form of driver inattention within three seconds before the event. The Study found that drowsiness increased the risk of a crash or near-crash by at least a factor of four, but noted that

drowsiness may be underreported by police crash investigations. The Study also found that reaching for a moving object, use of cell phones, and other distracting activities are more likely to be involved in an inattention-related crash or near crash.

Although driving distracted or drowsy is a significant challenge, according to the Washington State's Strategic Highway Safety Plan: Target Zero, there are no current proven strategies to reduce collisions, however, promising strategies include to:

A. Implement a targeted shoulder rumble strip program

B. Improve areas for drivers to pull off the road and get sleep when needed.

More data analysis and additional research is needed to develop proven, effective strategies.

6. Improve bicycle and pedestrian safety.

A. Continue to provide education, outreach, and training in the following areas:

- Expand safe walks routes to school programs.
- Educate the public about pedestrian laws and the positive effects of targeted cross walk enforcement.
- Continue to build partnerships designed to reduce the incidence of pedestrian fatalities.
- Make low cost bicycle helmets available to community organizations for sale and distribution.
- Until an all-age statewide bicycle helmet law passes, make available model bicycle helmet ordinances to local communities to assist them in developing local ordinances requiring bicycle helmet use.
- Educate motorists about safety sharing the road with bicyclists and proper behavior around bicycles (Washington State Drivers Guide).

B. Implement a statewide bicycle helmet law for all ages.

7. Conduct public information and education programs.

8. Continue statewide high-visibility enforcement and media campaigns.

9. Plan, implement, and evaluate media campaigns that publicize the enforcement activity.

10. Build new and expand partnerships.

Resources:

Washington State

1. The Washington Traffic Safety Commission (WTSC). Website: http://www.wa.gov/wtsc/.

2. The Washington State Patrol, website: http://www.nhtsa.dot.gov/people/outreach/safesobr/16qp/adprograms.html.

3. The Washington State Booster Seat Coalition Website: www.boosterseat.org and the phone number: 1-800-BUCK-L-UP.

4. Washington State's Strategic Highway Safety Plan: Target Zero, May 5, 2006.

5. The Washington State Childhood Injury Report Website: http://www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/WSCIR_Motor_Vehicle_Occupant_Injury.pdf.

6. Motor Vehicle Deaths Chapter, *2002 Health of Washington State*, http://www.doh.wa.gov/HWS/doc/IV/IV_MV.doc.

7. Washington State Patrol, El Protector Website: http://www.wsp.wa.gov/about/elprotct.htm.

8. Washington State's Strategic Highway Safety Plan: Target Zero, prepared by the Washington Traffic Safety Commission, Draft Report, May 5, 2006.

National

8. The National Highway Traffic Safety Administration (NHTSA) website: http://www.nhtsa.dot.gov/people/outreach/safesobr/16qp/battling.html.

9. Ten Promising Sentencing Practices for Addressing the DWI Offender Website: http://www.nhtsa.gov/people/injury/enforce/PromisingSentence/pages/.

10. Traffic Safety Marketing: Website: http://trafficsafetymarketing.gov/.

11. The American Association of State Highway and Transportation Officials (AASHTO) Website: http://www.aashto.org, Strategic Plan Website: http://cms.transportation.org/?siteid=60.

12. The National Strategic Highway Safety Plan Website: http://safety.transportation.org/plan.aspx.

13. Traffic Injury Research Foundation Website: http://trafficinjuryresearch.com/index.cfm.

14. NCHRP Report 500, Volume 10: A Guide for Reducing Collisions Involving Pedestrians. Website: http://safety.transportation.org/guides.aspx?cid=29.

15. Safe Kids Worldwide Website: http://www.safekids.org/.

Reducing Motor Vehicle-Related Injuries in Washington State

Because we have these resources…

Inputs

- Funding
- Data
- National Highway Traffic Safety Administration (NHTSA)
- State Agency Staff (WTSC, DOH, DOT, WSP, DOL & Washington Association of Sheriffs and Police Chiefs (WASPC)
- Local partners, organizations, citizens
- Injury Community Planning Group
- Research-based best practices or promising interventions

…we are able to implement these strategies/ activities…

Strategies/Activities

- Reduce impaired driving
- Reduce speed
- Increase use of seat belts and child restraints
- Enhance public education and outreach
- Continue to build partnerships
- Continue targeted enforcement of current motor vehicle laws
- Develop new programs for targeted populations
- Improve bicycle and pedestrian safety

…and create these resources…

Outputs

- Legalization of automated traffic enforcement
- WA Child Restraint Law in 2007
- Public education campaigns such as "Click It or Ticket"
- New partners such as local community and citizen involvement programs
- DUI Campaign: "Drive Hammered – Get Nailed"
- All ages bicycle helmet law
- Community based programs that work with law enforcement

…so that we achieve these outcomes for our citizens.

Short Term Outcomes → **Intermediate Outcomes** → **Long Term Outcomes**

KNOWLEDGE

- ↑ Knowledge and awareness of current traffic laws
- ↑ Awareness of motor vehicle risks
- ↑ Awareness of risks related to impaired driving and speeding
- ↑ Awareness of risks related to pedestrians & bicyclists

CAPACITY

- ↑ Ability of legislative system to enact new laws
- ↑ Ability of agencies and judicial system to enforcement traffic laws
- ↑ Ability of community-based programs to work with law enforcement

BEHAVIOR

- ↓ Impaired driving
- ↓ Speeding
- ↓ Collisions involving high risk groups
- ↑ Seat belt and child restraint use
- ↓ Motor vehicle and pedestrian collisions & vehicle and bicyclist collisions

Long Term Outcomes

- ↓ Motor vehicle occupant death rate
- ↓ Rate of deaths per 100 million vehicle miles traveled
- ↓ Motor vehicle traffic hospitalization rate
- ↓ Costs for hospitalization and long term care due to motor vehicle crashes
- ↓ # of pedestrian deaths
- ↓ bicycle-related head injuries

Revised 6/26/06